2011 M/V *Tiĝlax̂* Field Season

Winter Work

Although it was a project that was completed in 2010, it will be mentioned in the 2011 annual report. The complete rebuild of *Tiĝlax̂*'s engines began in late December of 2010. The ship has (2) 3412 Caterpillar engines as its main propulsion. Upon completion of the 2010 field season the engines had compiled over 18000 hours of run time on them since their last rebuild --- well beyond the hours recommended by the manufacturer. Also the port engine had an emergency repair done in May that negated its operation in that condition for another field season.

A contract was awarded to All Power Services (Houston, Texas) to do a complete in-line rebuild of the ship's engines in December. A crate of parts and accessories arrived on the 9th and the lead mechanic (Manny) arrived on the morning of the 13th to be greeted by subzero temperatures. The first thing he needed to purchase was a new set of coveralls; it's a little warmer in Texas in December.

Eric, Manny and I began the tear down that afternoon of the port engine. The engine had a coolant problem the year earlier that led us to believe the main engine block had a hole in it causing coolant to enter the engine from somewhere. Within two days we all realized that the port block had, in fact, numerous holes in it that made it unusable and required its removal. The option to remove it if necessary had been written into the contract so nothing had to be rewritten. The contract also stated that removal of the block was the responsibility of the ship's crew. This had never been done before and only two options were discussed: remove the block through the engine room hatch, or cut a hole in the side of the ship and remove it that way if need be. Obviously the engine room hatch (see figure 1) was the first choice and there seemed to be more than 1 ½ inches to spare to get the block out the hatch!

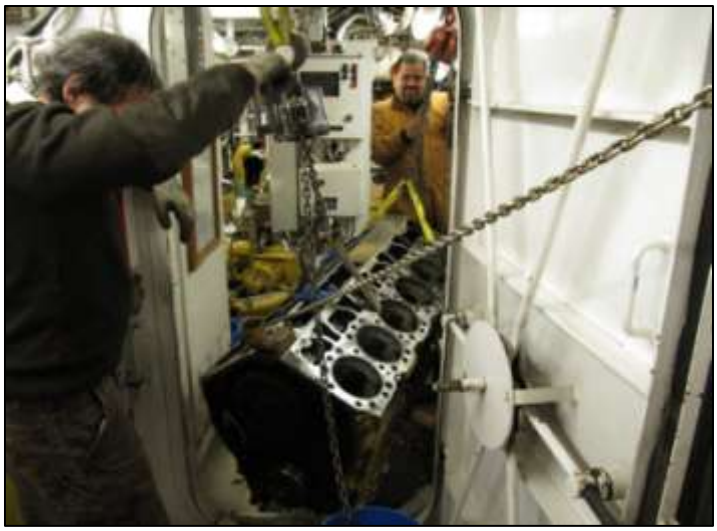

Figure 1. Removing the defunct engine block through the engine room hatch.

Lucas, Manny's assistant, arrived from Texas on the following Thursday and he also needed new coveralls because the subzero temperatures continued to the point where the harbor began to freeze up. The four of us, in the spirit of team work, began the task of removing the block from the ship. Once the engine was removed from its bed the head scratching began but after deliberation amongst all it took a total of four hours to get the actual block outside the engine room and ready for removal from the ship via the shore side crane located at the city dock.

The next step was for the ship to shift over to the fish dock and remove the bad block and deliver it to Anchorage and pick up the new engine block waiting at the Caterpillar dealership. It took longer to go over to the fish dock on one engine and remove the block from the ship than it did to remove the block from the engine room. The harbor had frozen in almost solid by the time we made the shift restricting the ship's maneuverability. The closer the ship got to the fish dock, the more ice was packed ashore impeding advancement to the dock. The boys from Texas had never seen anything like this before. After numerous tries and different approaches and a comment from the engineer "you just moved a piece of ice bigger than my house" we were finally alongside and ready to remove the old engine block.

Four hundred and forty miles later (i.e., round-trip to Anchorage to retrieve the new engine block), and another trip to the fish dock, the new engine block was aboard. At this point in the project things began to run smoothly. The guys worked right through the holidays only stopping once for a Christmas meal at my in-laws'. The starboard engine block had no holes in it so it stayed on its bed and worked was performed quite efficiently having already done the job once! On December 31st the ship was ready for sea trials which took place in Kachemak Bay. All the managers and their families came aboard and the ship cruised to Tutka Bay. It was a crisp sunny winter morning with the Aleutian Range in clear view for all to see (which the Texans thoroughly enjoyed). There was an abundance of murrelets on the water at the head of the bay which just thrilled the birders on board. Eric, Manny, and Lucas were satisfied with the performance of the new engines. We were now cleared and ready for the 2011 field season.

Field Observations

We began the field season with an extensive cooperative trip with the University of Alaska and Pacific Marine Environmental Laboratory (PMEL) in the Gulf of Alaska beginning April 25th. PMEL had shipped from Seattle 7 oceanographic buoys to be deployed in various locations from Kennedy Entrance to the Chiniak shelf break outside of Kodiak. The university had an extensive grid pattern of transects that covered the Western Gulf of Alaska. Transects

extended from Sitkalidak Island which is located on the southeast side of Kodiak, to the Seward Line which extends southeast from Resurrection Bay. While the Seward Line is separate from the grid transects (and part of the GLOBEC study since 1999), it was surveyed during this cruise along its 130 nautical miles run south from Seward. Within the grid, each transect was 60 nm long with at least 4 stations per transect. A subset of 11 transects needed to be transited with CTD casts and various other experiments conducted at each station. The weather cooperated quite nicely throughout the charter; there was only one day lost to weather where the ship spent the night in Port Hobron, an abandoned whaling station located on the west side of Sitkalidak Island.

On May 5th at Station GAK 11 we had a planetary gear failure on the oceanographic winch with the Rosette at 300 meters below the ship. The ship's crew began rigging the wire that was suspended below the ship. Independent lines were secured to the suspended wire to retrieve the oceanographic instruments 10 meters at a time utilizing the ship's aft crane. This process involved 4 of the ship's crew for four consecutive hours in deteriorating weather. All the gear was recovered and the ship was bound for Seward by 2:30 am on the 6th. In Seward we exchanged winches for a smaller, less capable winch to finish the trip in a limited capacity. All seven of the buoys that were brought aboard were deployed successfully before the failure of the equipment. The buoys were deployed to measure current speed, direction, and pressure in the Gulf of Alaska.

The Maritime Refuge field season began on May 18th after two extensive days of loading gear, groceries and fuel. It is customary to load all ship's fuel and groceries for a voyage of approximately 60 days. The remoteness of our field work dictates our ability to be self-sufficient for an extended period of time. In addition, enough essentials to sustain all field camps for about 2-1/2 months are transported in this voyage.

We arrived at the westernmost camp in Binnacle Bay, Agattu Island, on May 29th -- some 1500 nautical miles west of our home port. The trip west had typical spring weather the farther west we went. The major passes of Amutka and Seguam were quite rough with a dominant northwesterly wind in place. We encountered numerous dense seabird concentrations in these passes which is atypical at this time of year.

Once all the field camps were deployed we began our surveys for the year. The first took place was in the Rat Island group to collect more data on the seabird populations post-rat eradication of Rat Island in 2008. Very interestingly, two sperm whale carcasses were observed on Segula Island. Based on their decomposition, it appeared that they had been deposited sometime during the winter. From Amchitka Pass west, it is not unusual to observe sperm whales (they are the most abundant whale seen) and we have witnessed dead sperm whales in

the past along these shores and afloat at sea but never two on the same island in the same year.

The number of marine mammal observations from the bridge was down from previous years due to a computer glitch that occurred from July 9th through August 12th. During that time, there were no observations recorded even though the data were entered, resulting in historically low numbers. The following species were sighted and their numbers in parentheses: Dall's porpoise (185), fin whales (27), gray whales (3), humpbacks (93), killer whales (71), minke whales (12), and sperm whales (14). There were 9 short-tailed albatross recorded for the year, two of which were recorded in the Gulf of Alaska during GLOBEC on the spring trip. In previous years sightings of short tailed albatross were not shared with the bridge from the observer. Historically from the watch standers perspective it is unusual to see short tails in the spring in the Gulf of Alaska.

R/V *Tiĝlax̂* facts for 2011

- Days at sea: 134
- Miles traveled: 15,563 Nautical Miles
- Passengers: 160
- Ports of call: (6) Alaska: Adak, Kodiak, Homer, Sand Point, Seward, Unalaska, Dutch Harbor
- Dockings: 45
- Field camps supported: 11
- Countries supported: Canada, Germany and the United States of America
- Federal user groups: NMFS, NSF, PMEL, USDA, USFWS, USGS/BRD
- NGO's: Alaska Volcano Observatory, Aleut Corporation, Island Conservation, Memorial University, Scripps Institute, University of Alaska (Anchorage and Fairbanks), University of California

  Refuge projects supported: annual seabird monitoring camps (4), arctic fox eradication on Kanaga, FUDS (formerly used defense site) surveys, Kasatochi eruption studies, Kittilitz's murrelet telemetry on Agattu island project, logistical support for Adak, marine mammal surveys in the Rat and Near island groups, unused fox trapping cabin removal project, rabbit eradication at Poa Island, Rat Island song meter monitoring, Sanak Island fox recheck, seabird colony mapping at Atka, the Rat islands and the Shumagin islands, Sud Island marmot eradication, World War II "Valor in the Pacific" project support

Season Highlights

This year we worked with the PMEL for the first time. The project leader, Bill Floering, brought years of experience to support their mission of buoy deployment to map ocean currents and measure physical characteristics of the water. Buoy work is becoming an increasing part of our summer schedule and the seven buoys we deployed took up quite a bit of deck space on both the forward and aft decks. Because the forward crane has a higher safe working load, all seven buoys were successfully deployed from the forward part of the ship. Some of the buoys weighed 1100 pounds out of the water and the moorings for them were up to 2400 pounds. These buoys are suspended in the water column at certain height above the ocean floor which means chain is added to the buoys before they are deployed to get them at the right height above the ocean floor (Fig. 2).

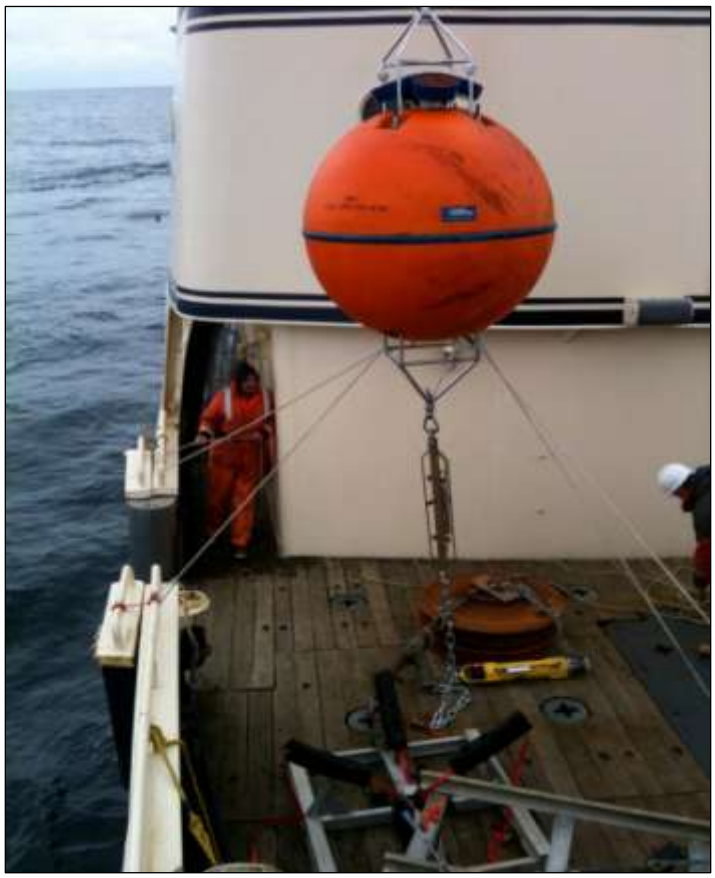

Figure 2. Preparing the buoy for deployment.

The buoy deployment in the Chiniak Gulch took over an hour with gear suspended in the water column because of the rigging process. With the experience of Bill Flooring and the capabilities of *Tiĝlax̂* crew, all seven buoys were deployed safely and successfully.

Some projects that began in 2010 were continued in 2011. The first was the recovery and re-deployment of the right whale acoustic buoys deployed by Scripps Institution in the Near islands and additional buoys deployed in the Gulf of Alaska after the mid-summer break. The ship departed Homer to deploy these buoys on July 10th with the YCC students aboard. [This is the second year the funding was available to get the kids outdoors and they had a firsthand look at shipboard life and its duties along with participating in biological surveys in the Shumagin Islands. They spent a week on board and disembarked in Sand Point where they

spent the following week helping to conduct an education camp on Popof Island for island residents.] Upon departing Sand Point the ship headed west to recover the fox trappers from Kanaga and an archeological camp at Adak.

The second "continuation" project was Kasatochi eruption studies, a joint study conducted with USGS and USFWS personnel monitoring the rebirth of the island's plants and animals after its eruption in 2008. This year, the auklets whom have never really uninhabited the island, show signs of successful reproduction. Jeff Williams, the unit biologist, found young chicks (Figure 3).

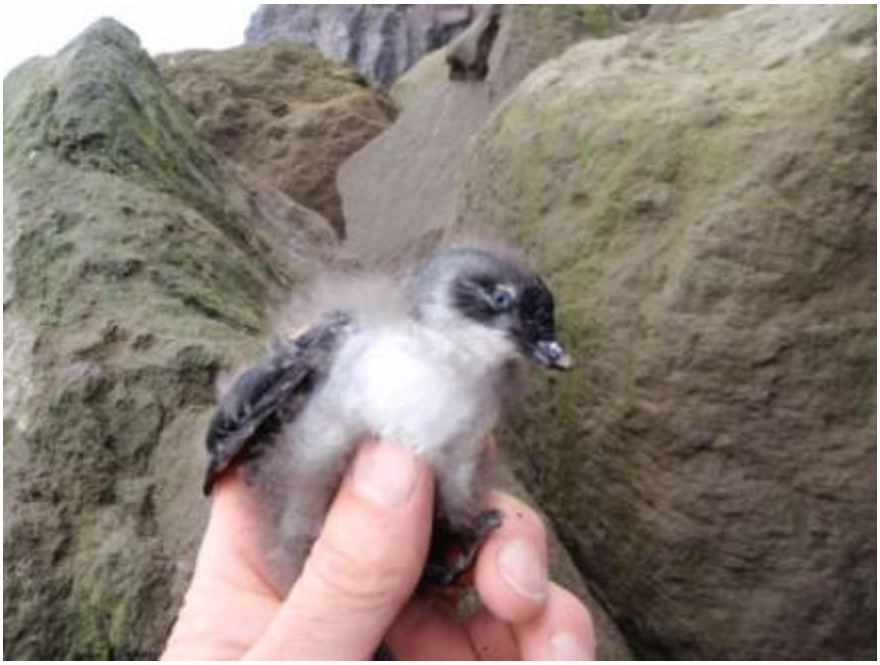

Figure 3. Least auklet chick found on Kasatochi Island, August 2011.

He also found remnants of the blind that was used in previous years to study birds nesting within the talus. This was especially interesting because people expected that high temperatures of erupted materials would have combusted the plywood. This find makes one wonder if the cabin that housed the scientists is still present and just covered by the 30^{+} feet of volcanic material that is at the cabin site!

August was a month of surveys. The first taking place at Atka Island for seabirds during the day and Kittlitz's murrelet captures at night. Erica Madison from USGS and her colleagues were successful in capturing 5 Kittlitz's during that eight day trip. Transmitters were placed on the birds to uncover facts about their foraging habits. That was followed by a visit from the deputy and the assistant deputy refuge managers in a survey of the formerly used defense sites (FUDS) in the central and western Aleutians. And finally, the ship supported work by the Marine Mammals Management division of the USFWS to conduct a survey of sea otters in the Rat and Near Island groups. Following the otter surveys, we picked up the camps at Agattu and Buldir to bring our western Aleutian summer season to a close.

All passengers departed the ship in Adak just in time to meet the regional office personnel (who were the last visitors of the year to Adak). They visited Adak to consider, among other things, management of caribou on the Island of Kagalaska. This summer caribou were seen on the island for the first time alive by a research group conducting a survey on island. It appears they have had a successful crossing of Kagalaska strait. The group was to consider possible solutions to the range extension of the caribou on Adak to the island of Kagalaska. This land is managed by the Alaska Maritime NWR and caribou are considered an invasive species.

Valor in the Pacific

There was one more stop out west before proceeding home and that was at Atka Island again. Poppy Benson, our outdoor recreation planner, had made arrangements for some of the 58 Aleuts residing at Nazan Bay to travel to Korovin Bay by four-wheeler on September 2nd. From there, the *Tiĝlax̂* picked them up from the beach at 8 am and brought them 34 nautical miles down the coast to the B-24 bomber that had crash landed in Bechevin Bay during World War II. The crash site is now a monument within the Valor in the Pacific program. This day trip gave Atkans the opportunity to discuss the monument with planners, and for some, see a part of their island they had never visited.

The pick up on the beach at Korovin Bay using our inflatables was a wet one. The west-northwest wind put a 2-3 foot surf on the sandy beach. Everyone was wet coming off the beach but they were laughing and screeching throughout all the transits to the ship. Once aboard they all had the opportunity to dry off and settle in with a warm drink; later Ryan Lee (the cook) provided a great lunch . Villagers told stories about life on island and the resources that they have to support their subsistence lifestyle. Favorite hunting and fishing sites were shared along with specific stories; one that Danny Boy told of the dead sea lion coming to life in the Lund skiff enroute back to the village had the wheelhouse crew in stitches.

By the time the ship had arrived at Bechevin Bay the weather had improved so the beach was very comfortable for landings. All passengers went ashore to visit the landing site of the B-24 Liberator which crashed on December 9th 1942. The plane which was piloted by Captain John Andrews is in good shape considering its age and location, and is the only nearly intact, combat veteran B-24 preserved at its war-time crash site.

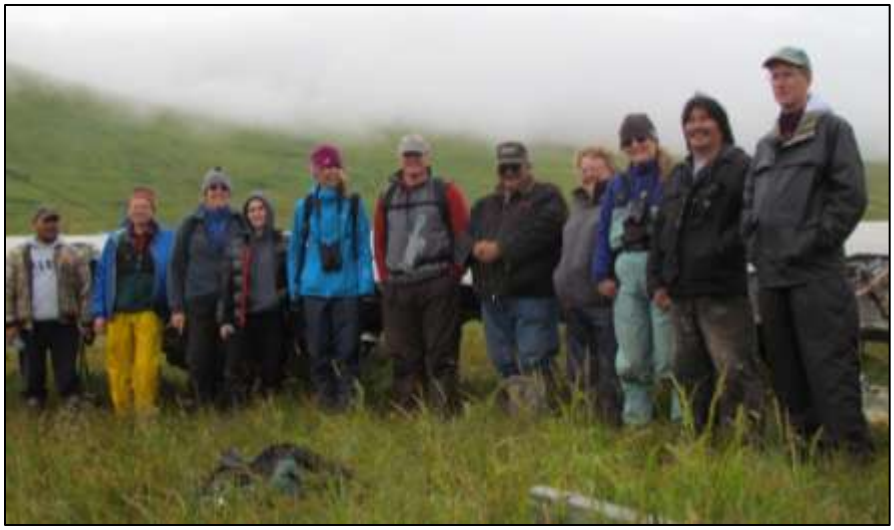

Figure 4. Atkans and USFWS staff visit “Valor in the Pacific” monument containing a B-24 bomber wreck.

When we arrived back at Korovin Bay in the early evening, the beach was crowded with people and four-wheelers, and fires were visible down the shoreline. People yelled back and forth to each other showing how excited they were to be back. The islanders who did not take the trip were excited to hear news of the voyage. This visit to Atka was indeed a highlight for us onboard. To have locals on board from the western-most Aleut-speaking village was an experience that will be remembered and it was long over do. When we return there, we will have friends to visit and as they said, ‘we are welcome anytime.’